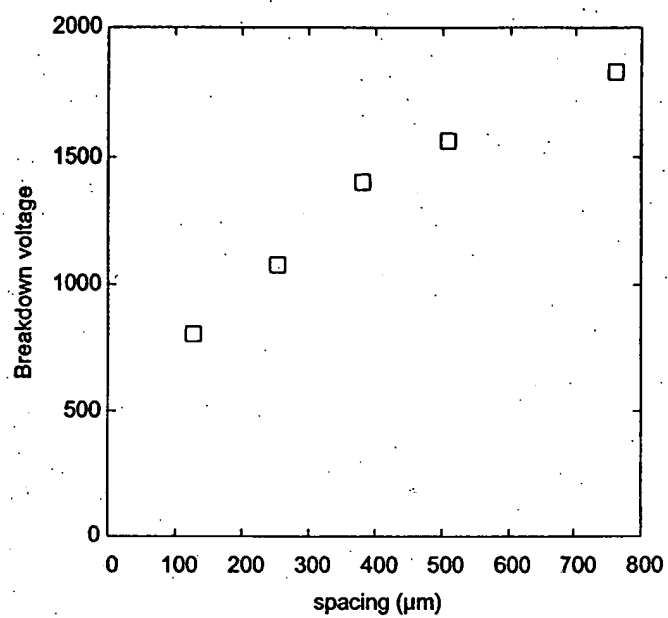


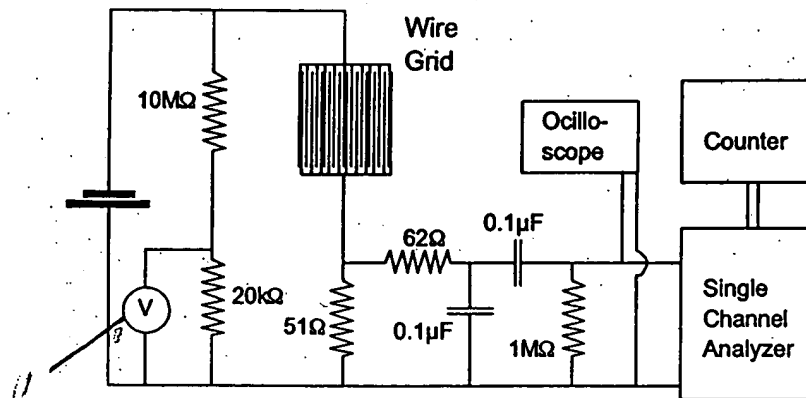
Schematic of T3 circuit; trace width 254 μm , spacing 381 microns, overall area 1.2 x 1.2 cm (not to scale).

Fig 1



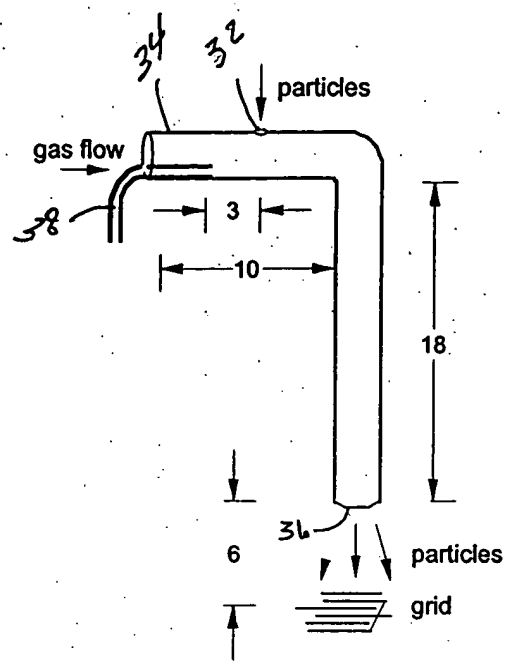
Plot of breakdown voltages of circuit board without particles present.

FIG 2



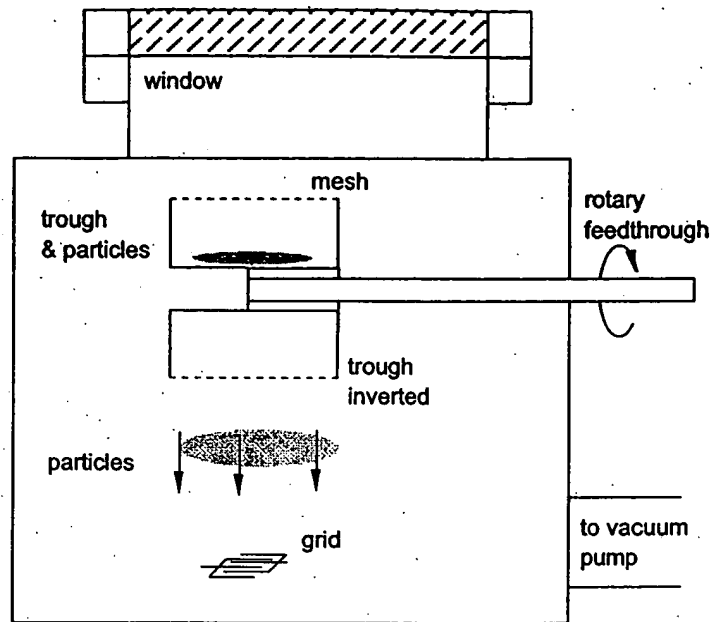
Circuit diagram including power supply, high pass and low pass filters, oscilloscope, single channel analyzer and counter.

FIG 3



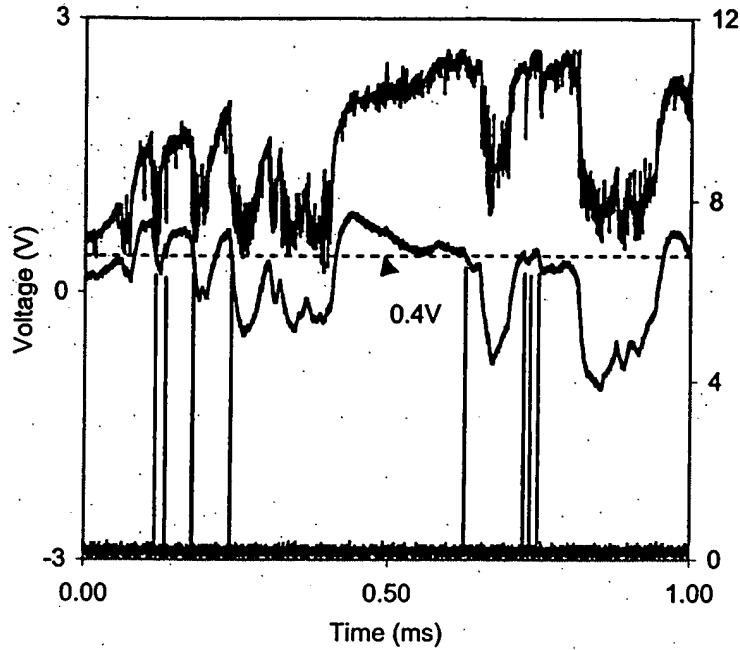
Particle delivery system for experiments in air. The dimensions are in cm.

FIG 4



Particle delivery system for experiments in vacuum.

Fig 5



Typical waveforms of the signal created by approximately 0.3 mg of impinging particles on grid T4 with a bias voltage of 50V in air. The uppermost waveform is the unfiltered signal, the waveform directly below it is the signal after it passed through the band pass filters (Y-axis scale on left). The lowermost waveform is the signal from the single channel analyzer (SCA) and corresponding Y-axis scale is on the right. Also shown is a dotted line indicating 0.4V. The SCA was set to trigger on the falling edges of pulses at 0.4V.

F, G, L